



Response to Comments

Date of Public Hearing: November 19, 2019

Public Hearing for the Removal of the Inspection and Maintenance (I/M) Program in Middle Tennessee

The Tennessee Department of Environment and Conservation, Air Pollution Control Division (TDEC-APC) appreciates everyone's attendance and participation at the public hearing on November 19, 2019. The purpose of this public hearing was to hear comments on the Division's proposed removal of the Inspection and Maintenance (I/M) Program in Middle Tennessee.

The Tennessee legislature initiated legislation, which resulted in Public Chapter 953, to eliminate the I/M program. The TDEC-APC did not initiate the process of eliminating the I/M program. The Tennessee General Assembly passed a law requiring the I/M program be removed from Tennessee's State Implementation Plan and be eliminated. Once the law was passed, the TDEC-APC developed a noninterference demonstration that demonstrates removing the I/M program does not interfere with attainment or maintenance of the National Ambient Air Quality Standards (NAAQS).

The public hearing started with Jaclyn Mothupi, with TDEC's Office of External Affairs, reading an opening statement. Then, attendees were asked if they would like to make comments for the record. Six people made oral comments for the record. Additionally, 89 people submitted written comments. In this document, the TDEC-APC responds to the comments made during the public hearing and submitted in writing.

Commenter: Opus Inspection, Inc.

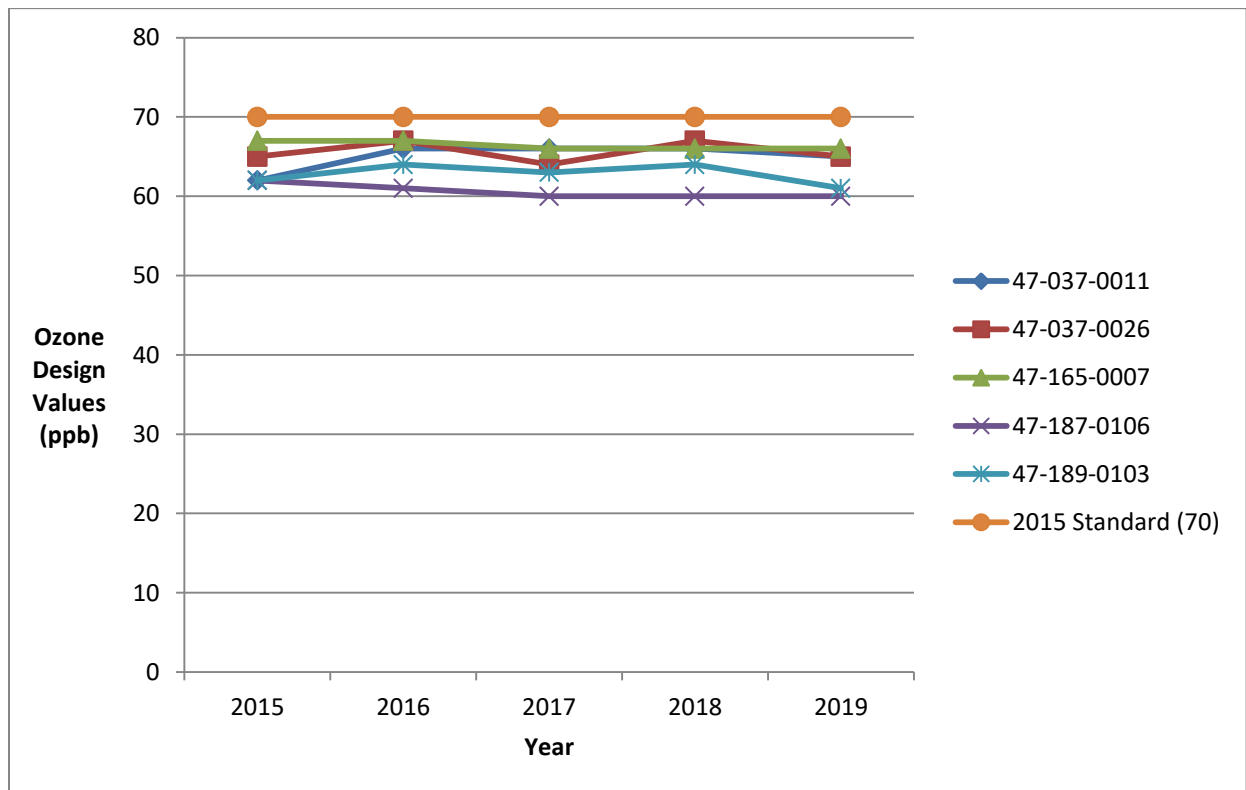
Comment: While current NAAQS-related design values are below levels of the standard in Middle Tennessee, recent observations in air quality in the region have shown an upward trend in highest concentrations across all monitors indicating the reversal of improvements resulting from existing control programs. Between 2014 and 2018, 4th high maximum daily average (MDA8) values have remained the same or increased at every monitor in the domain.

Response: The TDEC-APC agrees with the part of the comment that Middle Tennessee is currently in attainment with all of the ozone NAAQS including the current 2015 ozone NAAQS of 70 ppb. The TDEC-APC disagrees with the assessment that there is an upward trend in ozone values. The commenter did not use the correct metric for assessing ozone values. The commenter looked at the highest four values in each year from all of the monitors combined. The ozone values should be looked at separately for each monitor. The metric established by EPA that is used for the NAAQS is called the design value, which is

the fourth-highest daily maximum, averaged across three consecutive years for each monitor. The highest design value for the five ozone monitors in Middle Tennessee is 72 in 2014, 67 ppb in 2015, 67 ppb in 2016, 66 ppb in 2017, and 67 ppb in 2018. Preliminary data in 2019, indicates that the highest design value for the five ozone monitors will be 66 ppb. The TDEC-APC would characterize this as a flat trend or even a slightly downward trend. The data and figure below show the design values for each of the five ozone monitors for 2015-2019, which are all below the current 2015 ozone NAAQS of 70 ppb.

Ozone Design Values (DV in ppb) for 2015-2019

AIRS ID	Site Name	2015	2016	2017	2018	2019
47-037-0011	Trinity Lane	62	66	66	66	65
47-037-0026	Percy Priest	65	67	64	67	65
47-165-0007	Rockland Recreation Area	67	67	66	66	66
47-187-0106	Fairview Middle School	62	61	60	60	60
47-189-0103	Cedars of Lebanon State Park	62	64	63	64	61



Commenter: Opus Inspection, Inc.

Comment: TDEC has failed to simulate the impact of removal of the I/M program using air quality modeling. Ozone concentrations have non-linear correlation to NOx and VOC emission changes and cannot adequately be estimated exclusively using scaling ratios based on emission reduction sensitivities.

Response: Early in the process of developing the Noninterference Demonstration, the TDEC-APC consulted with the EPA on what information would be necessary to include in the demonstration. The EPA advised the TDEC-APC that an emission inventory projected out to 2022 would be needed in the demonstration, and the inventory should show two scenarios: (1) emissions with the I/M program and (2) emissions without the I/M program. Since the increase in emissions between the two scenarios was very small, the EPA advised the TDEC-APC that a full air quality photochemical modeling analysis was not required for the demonstration. The TDEC-APC included the sensitivity analysis based on the SEMAP modeling in the Noninterference Demonstration as a weight of evidence. The EPA's Noninterference Demonstration guidance (dated June 8, 2005) allows for the EPA to make case-by-case determinations on what is required to be included in a demonstration based on the current air quality in the region and the magnitude of the increase in emissions due to the removal of a control measure.

Commenter: Opus Inspection, Inc.

Comment: TDEC bases both its base year and future year emission assumptions on a version of EPA's 2014 National Emission Inventory (NEI) that is now multi-versions old. TDEC should consider revising its analysis using the most current, more appropriate version of the NEI that is based on a 2016 calendar year and was developed with significant input from state and regional organizations

Response: The TDEC-APC started the emission inventory analysis and projection work in July 2018, shortly after the passage of Public Chapter 953. The most important sector to analyze was the onroad sector since the elimination of the I/M program affects the onroad sector. For the onroad sector, the TDEC-APC did not use the 2014 NEI to project emissions. Instead, emissions from onroad sources are estimated through the use of locally gathered information on the vehicle population and the miles driven in each county, as well as a number of other inputs, combined with the EPA's Motor Vehicle Emissions Simulator (MOVES) model. For the nonroad and non-point sectors, the TDEC-APC used the 2014 NEI as a starting point to project emissions to 2022. These projections used commonly-used methodologies. For point sources with Major Source Permits in Sumner, Wilson, Rutherford, and Williamson Counties, the TDEC-APC projected emissions to 2022. Metro Nashville/Davidson County Pollution Control Division projected emissions to 2022 for all point sources in Davidson County. The 2016 base year platform, version 1 was not released until October 2019. Thus, the 2016 platform was not available when the TDEC-APC started its emission inventory work. The first draft of the Noninterference Demonstration was submitted to the EPA on April 29, 2019, well before the release of the 2016 base year platform. Regardless, the 2014 NEI was put together by EPA with information provided by State, Local, and Tribal agencies

and, according to the EPA's website, is a comprehensive and detailed estimate of air emissions of criteria pollutants, criteria precursors, and hazardous air pollutants from air emission sources.

Commenter: Opus Inspection, Inc.

Comment: 2014 was not a conducive year for ozone sensitivity simulations, nor did it contain high ozone periods that would adequately allow for the determination of impact of control strategies and air quality response.

Response: The TDEC-APC did not use 2014 as a base year for photochemical modeling so the meteorological conditions in this year are irrelevant. As discussed in the previous response, the TDEC-APC used the 2014 NEI as a starting point for many of the sectors to project emissions to 2022. However, for the most critical portion of the emissions inventories, the onroad sector, the TDEC-APC projected 2022 emissions from locally gathered information and the EPA' MOVES model.

Commenter: Opus Inspection, Inc.

Comment: TDEC relies on a technical analysis completed in 2014 and that is based on inventories and assumptions now considered aged in their application of ozone sensitivity factors to estimate the impact of the removal of the I/M program. The factors generated from that work were identified as being inappropriate for other simulations beyond the scope of the original work.

Response: The TDEC-APC used the sensitivity analysis as a weight-of-evidence in the Noninterference Demonstration. The State of Georgia used the same SEMAP study to perform a similar sensitivity analysis for inclusion in their document titled "Noninterference Demonstration for the Relaxation of the Summertime Reid Vapor Pressure (RVP) Requirements in the Former 13-County Atlanta Designated Volatility Nonattainment Area". Georgia's Noninterference Demonstration was approved by the EPA in the Federal Register on September 20, 2019 (49470 Federal Register). The TDEC-APC believes that the EPA will approve Tennessee's Noninterference Demonstration with a sensitivity analysis based on the SEMAP study since Georgia's Noninterference Demonstration with a similar sensitivity analysis based on the same SEMAP study was approved by the EPA.

Commenter: Opus Inspection, Inc.

Comment: TDEC misused the SEMAP ozone sensitivity factor.

Response: The TDEC-APC acknowledges that trying to use the scaling analysis with percentage changes well above 30% would yield erroneous results, as stated in the SEMAP report. The TDEC-APC believes that scaling ratios are valid in this sensitivity analysis since the

percentage change in NOx (1.9%) and VOC (1.7%) emissions due to the removal of the I/M program are less than the 30% change in NOx and VOC emissions that were modeled in the SEMAP project. The TDEC-APC was conservative in its approach since average absolute sensitivities were normalized by the emission reduction from NOx and VOC in Middle Tennessee only and not by reductions in the entire state or entire region. If average absolute sensitivities were normalized by the emission reduction from NOx and VOC in the entire state or entire region, then the predicted increase in ozone would have been lower. As stated in the previous response, the TDEC-APC believes that the EPA will approve Tennessee's Noninterference Demonstration with a sensitivity analysis based on the SEMAP study since Georgia's Noninterference Demonstration with a similar sensitivity analysis based on the same SEMAP study was approved by the EPA. Similar to Tennessee's sensitivity analysis, the percentage increase in NOx and VOC in Georgia's sensitivity analysis were well below the 30% change in the SEMAP study. As mentioned previously, the sensitivity analysis was included as a weight-of-evidence and the main reason for concluding that there will not be interference with the NAAQS is that the increase in NOx and VOC is very small.

Commenter: Opus Inspection, Inc.

Comment: TDEC makes an assumption that each ton of a pollutant precursor emission has an equal impact on air quality as compared to every other ton of the same pollutant precursor, regardless of emission source and where in the state the emission occur. Recent modeling on this subject demonstrates that local motor vehicle source emissions have significantly greater impact on local air quality compared to all other source categories and regions. Category-specific source apportionment analyses conducted elsewhere indicate that NOx emissions from Tennessee's motor vehicle source category may have a much greater impact on local air quality than estimated by TDEC.

Response: The TDEC-APC used the "impact factors" displayed in the Alpine report in Figures 14-17 to calculate the projected increase in ozone due to the elimination of the I/M program. The TDEC-APC multiplied the "impact factor" for mobile sources by the projected increase in NOx (478.52 ton/year) to calculate the projected increase in ozone at each monitor due to the NOx increase from removal of the I/M program. The "impact factor" is listed in the second column. The NOx increase is listed in the third column. The projected increase is listed in the fourth column. The TDEC-APC obtained the following results:

AIRS ID	"Impact Factor" for mobile sources O3 ppb/NOx ton	Increase in NOx ton/year	Increase in O3 (ppb) due to NOx increase
47-037-0011	0.00039	478.52	0.187
47-037-0026	0.00025	478.52	0.120
47-165-0007	0.000445	478.52	0.213
47-187-0106	0.00027	478.52	0.129

The TDEC-APC compared these results to Table 16 in the TDEC-APC's Noninterference Demonstration, which is displayed here in summary.

AIRS ID	Increase in O3 (ppb) due to NOx increase	Increase in O3 (ppb) due to VOC increase	Increase in O3 (ppb) due to NOx & VOC increases
47-037-0011	0.24059	0.00888	0.249
47-037-0026	0.25454	0.00782	0.262
47-165-0007	0.19545	0.00022	0.196
47-187-0106	0.18518	0.00045	0.186

When these results are compared, the resulting increase in ozone from Alpine's "impact factors" are actually less than the increase in ozone that were calculated using TDEC-APC's sensitivity analysis approach.

Commenter: Opus Inspection, Inc.

Comment: TDEC includes in its assumptions that existing emission control programs will remain in force during the foreseeable future. As has been demonstrated by EPA, a significant number of federal air quality regulations have been "rolled back", removed from requirements, or are in the courts pending review and decision. Should these regulations be partially or completely stricken from the list of required control programs, assumptions included that assume emission decreases and associated air quality improvements will be invalidated.

Response: The TDEC-APC believes that the commenter is overstating the facts by stating that a "significant number of federal air quality regulations have been "rolled back", removed from requirements, or are in the courts pending review and decision." The TDEC-APC has projected emissions to 2022 with currently promulgated state and federal regulations including some that have future compliance dates. Since it was only necessary to project emissions out a few years into 2022 for the Noninterference Demonstration, the TDEC-APC is confident that the projections are fairly accurate. The Noninterference Demonstration is a demonstration for the removal of one regulation, the I/M regulation, and is not intended to show the effects of speculative regulatory changes that may be made by the EPA or federal courts for which Tennessee has no control.

Commenter: Stephen Foster, Opus Inspection, Inc.

Comment: We have submitted a comment and report from Alpine Geophysics. Their findings are that the elimination of the program will have an adverse effect on the air quality in Middle Tennessee and potential loss of attainment status. In addition, the removal of the program will have a negative economic impact on the automotive industry in Tennessee.

Response: The TDEC-APC disagrees with the conclusion that the elimination of the I/M program will have an adverse effect on the air quality in Middle Tennessee and potential loss of attainment status. The noninterference demonstration shows that removing the I/M program will increase CO, NOx, and VOC by a small amount, which will cause a small increase in ozone values and will not interfere with attainment or maintenance of the NAAQS. The commenter did not elaborate on why they stated that the removal of the I/M program will have a negative economic impact on the automotive industry in Tennessee. The TDEC-APC is not aware of any job loss that will occur other than those associated with the contractor, Opus Inspection, Inc., that operates the I/M testing stations.

Commenter: Stephy Jean Moore

Comment: The commenter was opposed to the removal of the I/M program and was concerned about the effects it would have on climate change. She also asked for a reason the I/M program was being removed.

Response: Light-duty motor vehicles do emit carbon dioxide (CO₂), which is a greenhouse gas. The I/M program is designed to ensure that vehicle emissions of carbon monoxide (CO), nitrogen oxides (NOx), and volatile organic compounds (VOC) are properly controlled. The I/M program was not designed to ensure that vehicle emissions of carbon dioxide are properly controlled. Thus, removing the I/M program does not directly affect the control of carbon dioxide. The Tennessee legislature initiated legislation, which resulted in Public Chapter 953, to eliminate the I/M program. Once the law was passed, the TDEC-APC had to develop a noninterference demonstration that demonstrates removing the I/M program does not interfere with attainment or maintenance of the NAAQS.

Commenter: Several commenters submitted comments that were almost identical to the following comment.

Comment: I wish to express my support for continued emissions testing in Tennessee's major cities. Rural and urban regions face different issues when it comes to pollution and air quality, and doing away with emissions testing in cities like Nashville and Chattanooga could have disastrous effects on our environment, current quality of life, and the lives of future generations. Tennessee already ranks in the bottom half of the country in terms of overall air quality. As Tennessee grows, it will only become more important to protect our air quality so that it can continue to be a beautiful and healthy place for all who wish to call this place home. Restricting emissions testing sets the wrong precedent and endangers our communities. I hope that you consider continuing to allow our counties to take the steps necessary to protect their citizen's air quality.

Response: Except for a small portion of Sullivan County that is designated as nonattainment for sulfur dioxide, the entire State of Tennessee is in attainment with all of the National Ambient Air Quality Standards (NAAQS). Air quality in the Middle Tennessee area and Hamilton County has improved greatly over the years and both areas are currently in

attainment with all of the NAAQS. The noninterference demonstration shows that removing the I/M program does not interfere with attainment or maintenance of the NAAQS.

Commenter: Several commenters including Senator Ferrell Haile

Comment: Several commenters stated that they were in favor of eliminating the I/M program due to the fact that if a vehicle fails the inspection, the repairs required to fix the problem can be very expensive.

Response: The TDEC-APC is aware that repairs can be very expensive to fix a vehicle that fails inspection. As Senator Ferrell Haile stated in his comment, the expense to low income households is one of the reasons that he cosponsored the legislation. Other legislators who cosponsored the legislation have made this same comment about the expense of repairing a vehicle. As part of the current I/M program, the TDEC-APC offers waivers based on financial hardship that allow vehicle owners to register their vehicles after failing a test even if some or all of the necessary repairs are not made. Obviously, once the I/M program ends, this expense would end if an owner chooses to ignore a check engine light and not repair their vehicle. Even after the I/M program ends, the TDEC-APC urges vehicle owners to properly maintain their vehicle in order to minimize the effects of air pollution from their motor vehicle.